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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,190	07/30/2003	Muthu Senthil	ORCL-2003-032-01	3952

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EXAMINER	
PANNALA, SATHYANARAYAN R	
ART UNIT	**PAPER NUMBER**
2164	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	10/632,190	SENTHIL, MUTHU
	Examiner	Art Unit
	Sathyanarayan Pannala	2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/21/2007 has been entered.

2. Applicant's Amendment filed on 2/21/2007 in response to final Office Action has been entered with amended claim 6. In this Office Action, claims 1-20 are pending.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-20 are rejected under 35 U.S.C. § 101, because none of the claims are directed to statutory subject matter. Independent claims 1, 6 and 14 deals with simple abstract ideas. A claim that recites a computer that solely calculates a mathematical

formula or a computer disk that solely stores a mathematical formula is not directed to the type of subject matter eligible for patent protection. See Diehr, 450 US at 186 and Gottschalk v. Benson, 409 U.S. 63,71-72(1972).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kilpatrick et al. (US Patent 6,742,124) hereinafter Kilpatrick, and in view of Chan et al. (US Patent 6,697,844) hereinafter Chan

7. As per independent claim 1, Kilpatrick teaches an intrusion detection operating efficiently in real-time. Computational efficiency is generated through the representation of known sequences of system calls in a distance matrix. The distance matrix indirectly specifies known sequences by specifying allowable separation distances between parts of systems (col. 3, lines 11-16). Kilpatrick teaches the claimed, calculating a Levenshtein matrix of said first string and said second string (Fig. 6, col. 10, lines 7-10).

Kilpatrick teaches the claimed, determining a Levenshtein distance from said Levenshtein matrix (Fig. 6, col. 10, lines 27-28). Kilpatrick does not explicitly teach largest common substring between strings. However, Chan teaches the claimed, determining a largest common substring (Fig. 4, col. 9, lines 2-6). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Chan's teachings would have allowed Kilpatrick's method to reduce the amount of latency by caching and prefetching components of electronic mail messages using information relating to similar objects that were previously supplied to the client by the mail server (col. 2, lines 22-25 and lines 33-35). Chan teaches the claimed, determining a similarity between a set of characters in said first string and a set of characters in said second string as a function of said Levenshtein distance and said largest common substring (Fig. 4-5, 7A-B, col. 9, lines 2-6 and col. 10, lines 55-62).

8. As per dependent claim 2, Kilpatrick teaches the claimed, determining a largest common substring from said Levenshtein distance matrix comprises determining a longest diagonal of equal hamming distances of a lowest value (Fig. 5, Table 2, col. 9, lines 31-45).

9. As per dependent claim 3 Kilpatrick teaches the claimed, calculating a Levenshtein score (Fig. 5, col. 9, lines 44-45).

10. As per dependent claim 4, further comprising determining the length of the largest common substring (Fig. 5, Table 2, col. 9, lines 31-35).

11. As per dependent claim 5, further comprising calculating a largest common substring score (Fig. 5, Table 2, col. 9, lines 31-35).

12. Claims 6-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kilpatrick et al. (US Patent 6,742,124) hereinafter Kilpatrick, in view of Haigh et al. (USPA Pub. 2003/0004716 A1) hereinafter Haigh, and in view of Chan et al (US Patent 6,697,844) hereinafter Chan.

13. As per independent claim 6, Kilpatrick teaches an intrusion detection operating efficiently in real-time. Computational efficiency is generated through the representation of known sequences of system calls in a distance matrix. The distance matrix indirectly specifies known sequences by specifying allowable separation distances between parts of systems (col. 3, lines 11-16). Kilpatrick teaches the claimed, calculating a Levenshtein matrix of a first string and a second string (Fig. 6, col. 10, lines 7-10). Kilpatrick teaches the claimed, determining a Levenshtein distance from said Levenshtein matrix (Fig. 6, col. 10, lines 27-28). Kilpatrick does not explicitly teach largest common substring between strings. However, Haigh teaches the claimed, determining a largest common substring (Fig. 6, page 5, paragraph [0053-0054]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time

of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]). Kilpatrick teaches the claimed, calculating a Levenshtein score as a function of said Levenshtein distance (Fig. 6, col. 9, lines 44-45). Kilpatrick teaches the claimed, calculating a largest common substring score as a function of said largest common substring (Fig. 6, Table 2, col. 9, lines 31-35). Kilpatrick and Haigh do not explicitly teach determining similarity between two strings. However, Chan teaches the claimed, determining a similarity between a set of characters in said first string and a set of characters in said second string as a function of said Levenshtein distance and said largest common substring (Fig. 4-5, 7A-B, col. 9, lines 2-6 and col. 10, lines 55-62). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Chan's teachings would have allowed Kilpatrick's method to reduce the amount of latency by caching and prefetching components of electronic mail messages using information relating to similar objects that were previously supplied to the client by the mail server (col. 2, lines 22-25 and lines 33-35).

14. As per dependent claim 7, Kilpatrick teaches the claimed, calculating an acronym score of said first string and said second string (Fig. 6, col. 9, lines 44-45).

15. As per dependent claim 8, Kilpatrick and Haigh combined teaches claim 6. Haigh teaches the claimed, calculating a weighted acronym score comprising a product of said acronym score and an acronym weight factor (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

16. As per dependent claim 9, Kilpatrick and Haigh combined teaches claim 6. Haigh teaches the claimed, calculating a weighted Levenshtein score comprising a product of said Levenshtein score and a Levenshtein weight factor calculating a weighted largest common substring score comprising a product of said largest common substring score and a largest common substring weight factor and calculating a Levenshtein largest common substring score comprising a sum of said weighted Levenshtein score and said weighted largest common substring score (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

17. As per dependent claim 10, Kilpatrick and Haigh combined teaches claim 6. Haigh teaches the claimed, a sum of said Levenshtein weight factor and said largest common substring weight factor is equal to one (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

18. As per dependent claim 11, Kilpatrick and Haigh combined teaches claim 6. Haigh teaches the claimed, calculating a first weighted numerical score comprising a product of said Levenstein/largest common substring score and a string weight factor (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

19. As per dependent claim 12, Kilpatrick and Haigh combined teaches claim 6. Haigh teaches the claimed, calculating an acronym score, calculating a weighted

acronym score comprising a product of said acronym score and an acronym weight factor and calculating a second weighted numerical score comprising a sum of said first weighted numerical score and said weighted acronym score of said first string and said second string (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

20. As per dependent claim 13, Kilpatrick and Haigh combined teaches claim 6. Haigh teaches the claimed, a sum of said string weight factor and said acronym weight factor is equal to one (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

21. As per independent claim 14, Kilpatrick teaches an intrusion detection operating efficiently in real-time. Computational efficiency is generated through the representation of known sequences of system calls in a distance matrix. The distance matrix indirectly

specifies known sequences by specifying allowable separation distances between parts of systems (col. 3, lines 11-16). Kilpatrick teaches the claimed, calculating a Levenshtein matrix of a first string and a second string (Fig. 6, col. 10, lines 7-10). Kilpatrick teaches the claimed, determining a Levenshtein distance from said Levenshtein matrix (Fig. 6, col. 10, lines 27-28). Kilpatrick does not explicitly teach largest common substring between strings. However, Chan teaches the claimed, determining a largest common substring (Fig. 4, col. 9, lines 2-6). Kilpatrick teaches the claimed, calculating a Levenshtein score as a function of said largest common substring (Fig. 6, col. 10, lines 7-10). Kilpatrick does not explicitly teach largest common substring between strings. However, Haigh teaches the claimed, calculating a first numerical score as a function of said Levenshtein score and said largest common substring score (Fig. 6, page 5, paragraph [0053-0054]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]). Kilpatrick does not explicitly teach largest common substring between strings. However, Chan teaches the claimed, calculating a largest common substring score as a function of said largest common substring (Fig. 4, col. 9, lines 2-6). Kilpatrick and Haigh do not explicitly teach largest common substring between strings, However, Chan teaches the claimed, numerical score is a first quantification of a similarity between a set of characters in said first string and a set of

characters in said second string as a function of said Levenshtein distance and said largest common substring (Fig. 4-5, 7A-B, col. 9, lines 2-6 and col. 10, lines 55-62). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Chan's teachings would have allowed Kilpatrick's method to reduce the amount of latency by caching and prefetching components of electronic mail messages using information relating to similar objects that were previously supplied to the client by the mail server (col. 2, lines 22-25 and lines 33-35).

22. As per dependent claim 15, Kilpatrick teaches the claimed, calculating a subtracting the resultant of dividing said Levenshtein distance by an average of a length of said first string and a length of said second string from one (Fig. 6, col. 9, lines 44-45, col. 10, lines 27-28).

23. As per dependent claim 16, Kilpatrick, Haigh and Chan combined teaches claim 14. Haigh teaches the claimed, determining a length of said largest common substring from said Levenshtein matrix and dividing said length of said largest common substring by an average of a length of said first string and a length of said second string (Fig. 7, page 5, paragraph [0053-0054 and 0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to

overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

24. As per dependent claim 17, Kilpatrick, Haigh and Chan combined teaches claim 14. Haigh teaches the claimed, calculating a weighted Levenshtein score comprising a product of said Levenshtein score and a Levenshtein weight factor, calculating a weighted largest common substring score comprising a product of said largest common substring score and a largest common substring weight factor and summing said weighted Levenshtein score and said weighted largest common substring score (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

25. As per dependent claim 18, Kilpatrick teaches the claimed, calculating an acronym score and calculating a second numerical score as a function of said first numerical score and said acronym score (Fig. 6, col. 9, lines 44-45).

26. As per dependent claim 19, Kilpatrick, Haigh and Chan combined teaches claim 14. Haigh teaches the claimed, calculating a weighted Levenshtein score

comprising a product of said Levenshtein score and a Levenshtein weight factor, calculating a weighted largest common substring score comprising a product of said largest common substring score and a largest common substring weight factor, calculating a Levenshtein largest common substring score comprising a sum of said weighted Levenshtein score and said weighted largest common substring score, calculating a weighted Levenshtein/largest common substring score comprising a product of said Levenshtein/largest common substring score and a Levenshtein/largest common substring weight factor, calculating a weighted acronym score comprising a product of said acronym score and an acronym score weight factor and summing said weighted Levenshtein largest common substring score and said weighted acronym score (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

27. As per dependent claim 20, Kilpatrick, Haigh and Chan combined teaches claim 14. Haigh teaches the claimed, utilizing said first numerical score for determining said similarity, when said first string and said second string comprise numerical-type strings and utilizing said second numerical score for determining said similarity, when said first string or said second string comprise character-type strings (Fig. 7, page 5,

paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

Response to Arguments

28. Applicant's arguments filed on 2/21/2007 with respect to claims 1-20 have been fully considered but they are persuasive and details as follows:

a) Applicant's argument stated as "Applicants respectfully assert that the independent claims 1, 6 and 14 produce a useful, concrete and tangible result..." (see page 9 paragraph 2).

In response to Applicant argument, Examiner disagrees with argument regarding claims 1-20 rejection under 35 U.S.C. 101 based on simple abstract idea. In fact, applicant is claiming in claims 1, 6 and 14 as computation of distance, matrix, numerical values and comparison of distances. These claims do deal with simple computation. However, Examiner removed the word "mathematical" from the rejection reason and still the claims have abstract ideas.

b) Applicant's argument stated as "Aiken does not mention a Levenshtein distance."

In response to Applicant argument, again Examiner disagrees because Levenshtein distance is the same as edit distance, a person of ordinary skill in the data processing dealing with strings will know this information. Aiken do teach edit distance. However, Aiken reference is replaced with Chan reference to teach amended claims and argument moot.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sathyanarayan Pannala whose telephone number is (571) 272-4115. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SR Pannala

Sathyanarayan Pannala
Primary Examiner

srp
April 2, 2007